Electronic Supplementary Material (ESI) for Analyst.

RNA Chaperone Assisted Intramolecular Annealing Reaction Towards: Oligouridylated RNA Detection in Cancer Cells

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Experimental Section

Reagents. Chloroauric acid ($HAuCl_4 \bullet 4H_2O$) was obtained from Shanghai Chemical Reagent Company (Shanghai, China). Tris (2-carboxyethyl) phosphine hydrochloride (TCEP) and Diethyl pyrocarbonate (DEPC) were purchased from Sigma-Aldrich Inc. (St. Louis, Missouri, USA). The strand sequences were obtained from Genscript Biotech. Co., Ltd. (Nanjing, China) with the sequences as shown in Table S1. Fluorescence intensity was measured by RF-5301PC Spectrofluorophotometer (Shimadzu, Japan). All the samples in our strategy were excited at 548 nm and emitted at 562 nm. DEPC-treated deionized water was used in all experiments.

Table S1. Sequences of oligo used in this strategy. The italic type base pairs in RNA1 and RNA2 are the hybridization part. The bold bases in cDNA are BmtI cutting sites (**GCTAGC**) and HindIII cutting sites (**AAGCTT**). The underline bases of RNA1 are the hybridization part which target OUP let-7.

note	sequence (5'-3')
RNA1	AAAAAAUCCA*AGGAAAGACA*<u>*CCGA*</u>AAAAA-SH
Q-RNA1	AAAAAAUCCA*AGGAAAGACA*<u>*CCGA*</u>AAAAA-BHQ2
RNA2	5'-Cy3-*UCGGUGUCUUUCCU*-3'
cDNA*	**GCTAGC**<u>AAAAAATCCAAGGAAAGACA</u>GTAGATTGTATAGTTATCTCCCAGTGGTGGGTGTGACCCTAAAACTATACAACCTACTACCTCA**AAGCTT**
OUP let-7	UGAGGUAGUAGGUUGUAUAGUUUUAGGGUCACACCCACCACUGGGAGAUAACUAUACAAUCUAC<u>UGUCUUUCCUUGGAUUUUUU</u>
Oligos for selectivity test	
Let-7a	UGAGGUAGUAGGUUGUAUAGUU
Let-7b	UGAGGUAGUAGGUUGUGUGGUU
Let-7c	UGAGGUAGUAGGUUGUAUGGUU
miR 21	UAGCUUAUCAGACUGAUGUUGA

*cDNAs are dsDNA. Other sequences are RNA.

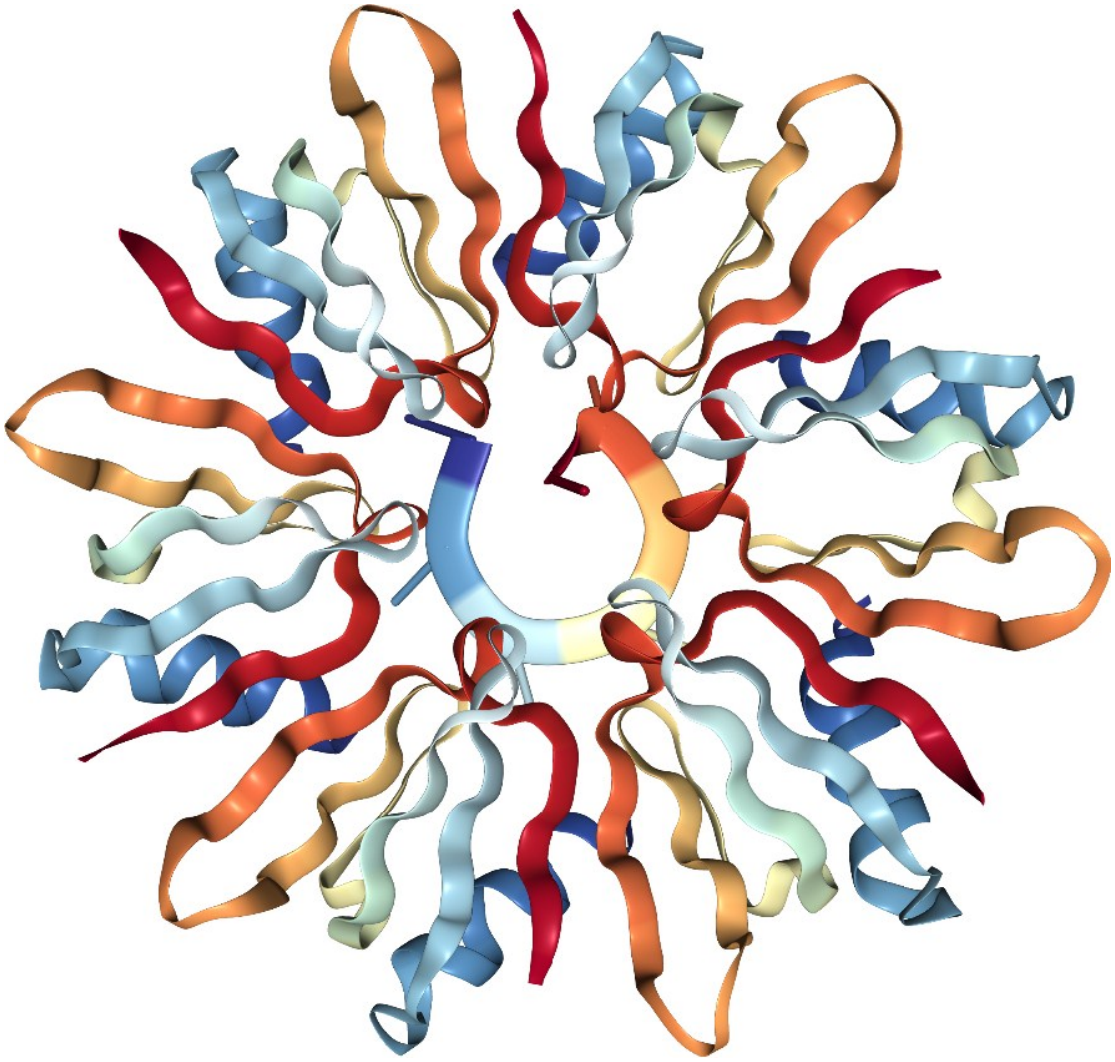

Fig. S1. The crystal structure of an Hfq/RNA complex. PDB number: 1KQ2.

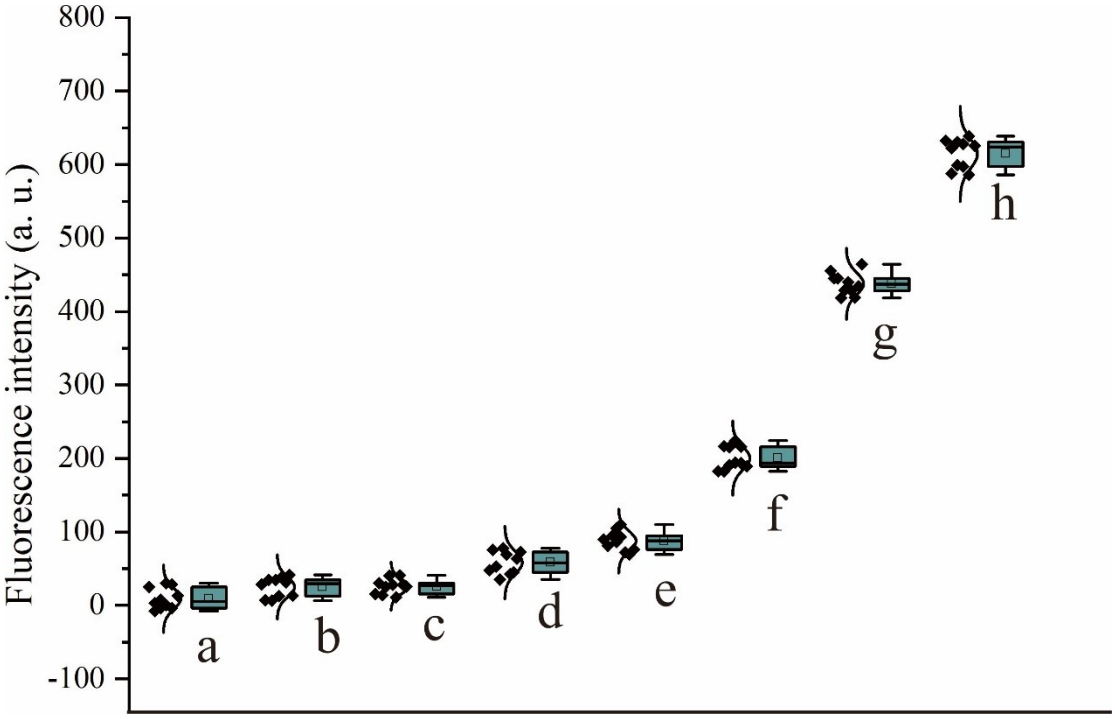

Fig. S2. Box plots reflecting the data distribution of ten independent trials for different concentrations of OUP let-7, a: 0, b: 10 nM, c: 20 nM, d: 50 nM, e: 100 nM, f: 200 nM, g: 500 nM, h: 800 nM.

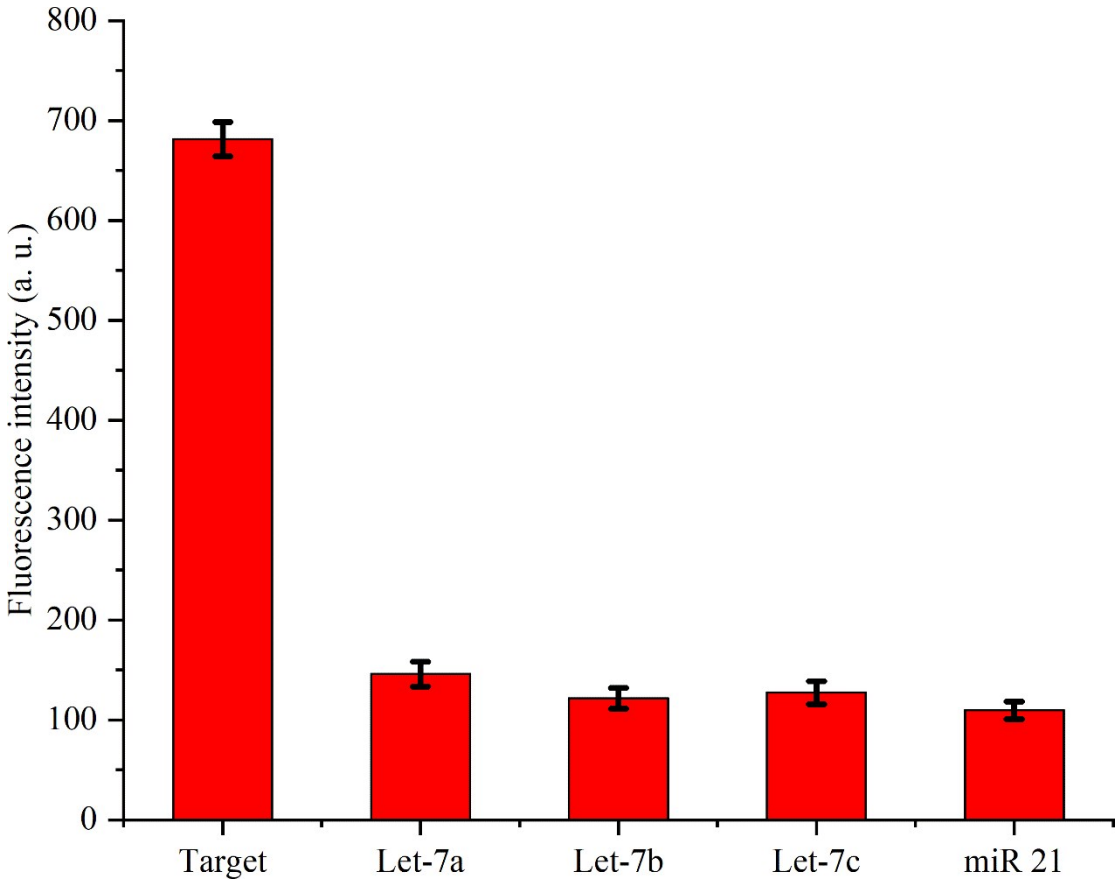

Fig. S3. The fluorescence intensity of target OUP RNA or other RNAs (1 μM each) reacted with probes.

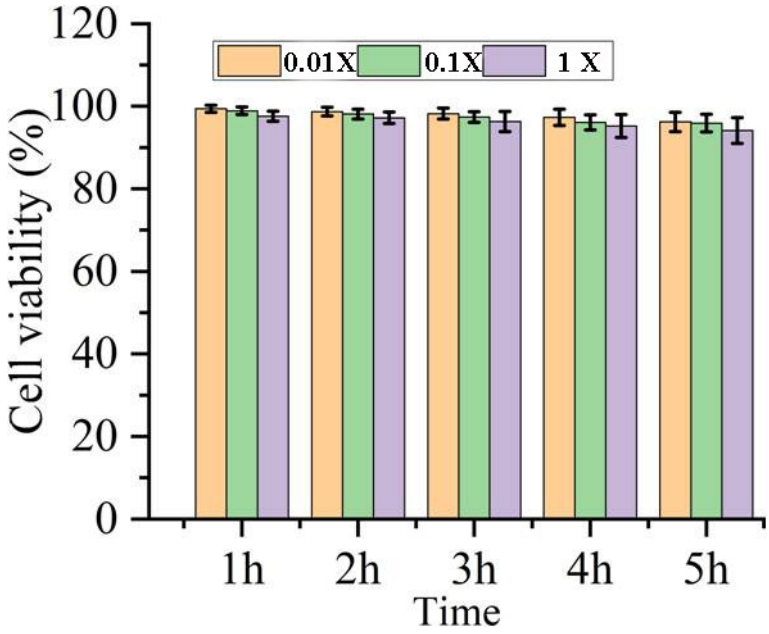

Fig. S4. Cell Viability of HeLa cells treated with the probes (1X), probes diluted 10 times (0.1 X) and probes diluted 100 times (0.01 X).

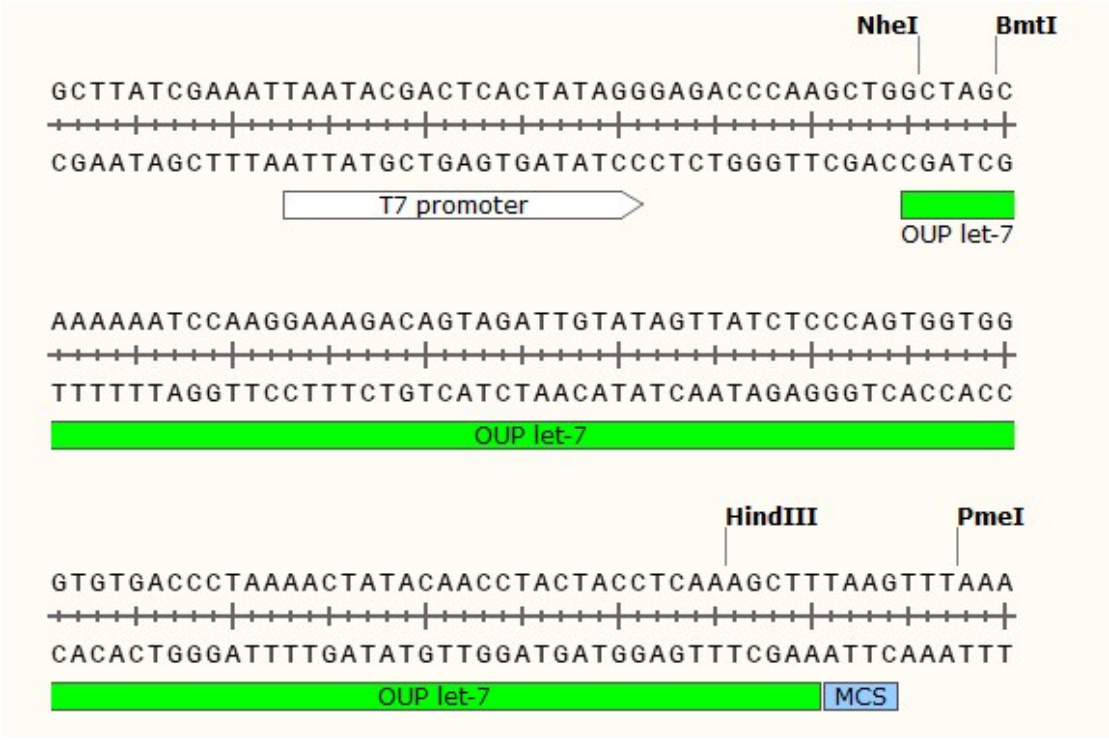

Fig. S5. The sequences of OUP let-7 cDNA (marked with green) and the site that cDNA cloned into pcDNA 3.1(-).